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and College Institute." I also found a portion of the bones, particularly those of the smaller animal, at the residence of Prof. S. G. Love, to whom I am much indebted for information bearing upon the subject.

The left side of the lower jaw, preserved almost entire, was two feet in length; and the size of cranium, from sections observed, was some three and a half feet in length. The depth of the jaw bone was seven and a half inches; its width six inches. There were two fragments of one tusk; the point, three feet and seven inches in length, six inches in width, with marked depressions upon one side of surface; the other fragment, two feet five inches in length, seven and a half inches in diameter and much decayed; an intermediate section and the one adjoining the cranium were gone. There were six teeth; larger ones seven and a half inches in length, weight five and a half pounds, with mammillated eminences (distinguishing the species), of about two inches in elevation. The enamel was well preserved. Sections of scapular were thirteen inches long, seven inches wide; fragments of ribs, twelve to eighteen inches in length. A section of the ribs, as first found, was five feet in length. Head of femur bone was also here.—I should judge the height of the larger skeleton to be fifteen feet, its length seventeen or eighteen feet.

The smaller skeleton (found at a short distance from the larger one), was probably seven feet in height; tusks four feet long, four inches wide; teeth three and half inches in length; sections of jaw and rib bones were also found.—T. A. CHENEY, *Leon, N. Y.*, Nov. 13, 1871.

A NEW FOSSIL BUTTERFLY.—Mr. S. H. Scudder has discovered a new species (and genus) of butterfly from Aix which is contained in the museum at Marseilles. He calls it *Satyrites Reyne-sii*, after the direction of the museum. The specimen consists mainly of the two forewings, the venation of which can be made out very satisfactorily. It is of the form, and has the general appearance, of *Portlandia*, though nearest to the East Indian *Debis*.

ANTHROPOLOGY.

FLATHEAD INDIANS.—I will give you now a short outline of the religious traditions of the Flatheads, comprising also their notions about the globe, etc.

The earth, according to them, is not spheroidal but flat, and surrounded with water on all sides, like an island, and heaven or sky is nothing else than a huge hollow mountain, covering the earth, as the covering of a kettle. Before the creation, *Skòmelten* (obsolete word, meaning mother, and which was substituted by the word *Skói*), a woman very powerful, and who took existence by herself, begot a son without assistance of man, and this son undertook to create heaven, and earth, and man; and for his dwelling he chose the summit of the covering, namely, heaven, whence he took the name of *Amòtkan*, which means, *He who sits on the tops of the mountains*; while *Skòmelten*, his mother, remained above on another land beyond the waters; for besides our earth, they thought that *Amòtkan* created other worlds, under, above and around us.

This *Amòtkan* was then considered as their invisible God, who has also many sons, though no wife; and when the Indians saw the whites for the first time, they considered them to be the natural sons of *Amòtkan*, and consequently immortal, until they saw one of them killed by the Blackfeet.

The first generation of mankind became very wicked, and turned a deaf ear to the admonitions of *Amòtkan*, who, in his wrath, drowned them all in a general inundation. *Amòtkan* undertook a second creation of a race of people, twice as tall as the first ones; but proving worse than the first, they were all destroyed by fire which came from heaven. The third generation being as bad as the first and second, was destroyed by *Amòtkan* through a general pestilence. The fourth generation would all have been annihilated on account of their crimes, had not mother *Skòmelten* interceded with her son in behalf of mankind. The wrath of *Amòtkan* was appeased by the prayers of his mother, and he promised never to destroy his creations again. But until that time the world was in perfect darkness, there being no sun; and the people being persuaded that the darkness was the cause of their wickedness, they held a general council for the purpose of enlightening the world; but as every one refused, *Sinchlèp* (a small prairie-wolf), being the smartest of all the animals, undertook and succeeded in lighting the world very little less than the actual sun, and the people were very glad. But the animals of those times had the power of speaking, no less than the people, and *Sinchlèp*, being very cunning, interfered too much in their secret business, and in pass-

ing by during the day published the actions which the people performed in secret ; wherefore, in anger, the people took *Sinchlèp* by the tail, which at that time was very long, and fastening him to the ground, prevented his being seen any more. The crow then offered himself in place of *Sinchlèp*, but, being naturally so very black, gave little light, and, unable to endure the ridicule of the people, he retired with shame.

Finally *Amòtka*n sent one of his sons, called *Spakaní*, to enlighten the world. Before doing so, *Spakaní* wished to marry with a woman of the earth. In coming down from heaven, he landed first in the camp of the Flatheads ; but the people seeing him, though very handsome, but so different from themselves, refused him admittance to their lodges. *Spakaní*, very much displeased, left the place, and seeing near the village a small cottage, inhabited by a family of frogs, he went in, complained of the people, and showed his desire to marry one of the frogs. There was one, very large and fat, and thought herself very happy to become the wife of the son of *Amòtka*n, and with one jump she became one flesh or incarnated with the cheek of *Spakaní*, and thus matrimony was celebrated or consummated. The people, on seeing the cheek of *Spakaní* so disfigured, and enraged at the presumption of Mistress Frog, tried with sticks to kill her, until the frog, very much ashamed, prayed her husband to leave the earth ; and since he had come to make himself sun, to go up immediately, which he did ; but to revenge himself for the contempt of the people, he does not allow them to see him clearly during the day, when he covers himself with a shining robe, and at the approach of night, he deposits his robe, crosses the waters under the earth, and then only shows himself as he is, with his wife frog on his cheek.

For these Indians, the sun and moon are one and the same thing ; and this notion accounts for the reason why they have but one and the same word to express both sun and moon, namely, *spakaní* ; and so also the spots in the moon are nothing else than a frog.

Having heard this story, I asked them (there were several chiefs among those present) whether they really believed the fable ; and they answered that they did, not knowing better ; then I asked them what they thought when they saw the sun and moon at the same time during the day. They all started, looked at one another in surprise, looked up, as though searching the sun and moon, then

joined in a general laugh, and covered their faces as if ashamed; and one of them, looking at me with only one eye across his fingers, said, "Well, we were all beasts, and like enough not one of us has ever observed and remarked what you say now." Since that time it was agreed to call the moon by the name of *spakaní skukùèz*, meaning the *sun of the night*.

As to the immortality of the soul, the end of the world, the recompense or punishment after death, they have the tradition that man in dying, dies only half—that is, the body; the other half (which they anciently did not know how to designate, but which afterward their ancestors called *Singapèns*) does not die, but the *singapèns* of the good ones go to stay with Amòtkan; though without knowing to what particular bliss, and the *Singapèns* of the wicked go to another place, not determined, having no other punishment than to be deprived of the company of Amòtkan. For wicked they intend liars and thieves, as they consider lying and theft, if not the exclusive, at least the greatest sins. Moreover, they said that the earth and the people have one day to come to an end, and that after this last day all the dead shall come to light again, and shall be placed in another land, better than the present, and that after such epoch the people shall die no more.

Notwithstanding the power and nobility of Amòtkan and Skò-melten, these were not the deities which the Flatheads worshipped, but Spakaní, the sun. After him came as geniuses the animals of every kind, the beaver, the crow, the deer, etc. But *Sinchlèp*, the prairie-wolf, was regarded the most powerful and favorable to mankind. To show the power and favor of *Sinchlèp*, their ancestors reported that there was a time when a large portion of the earth was inhabited by a set of giants, terrible men, who killed every one they met with, for which they were called *Natliskèliguten*, which in ancient language means "killers of men;" that *Sinchlèp*, in pity for the smaller people, went through all the earth, killed every giant, and converted them all into large stones; and even of late, when the Flatheads in crossing the mountains saw a basaltic stone standing upright, they said to one another, "*Keep aside, there is a Natliskèliguten killed by Sinchlèp*," and every large piece of silex they saw, was for them a fragment of an arrow of the "killers of men." As it oftentimes happens that one or more of these prairie-wolves come at night to howl near the village, there are still many, particularly the old women, who believe

that *Sinchlep's* howling foretells the arrival by the next day of somebody, either friend or foe, provided he only howls three times.

The worship which our Indians rendered to the sun, consisted in raising up towards the sun a morsel of meat or roots before eating them, and saying, "Sun, have pity of us, that animals and fruits may grow abundantly." In their particular distresses each one prayed to whatever first met his eyes, whether a tree or a stone.

In worshipping the sun, our Indians were not as fervent as the Blackfeet are even now; who, not satisfied with offering a parcel of their food, very often cut off large pieces of flesh from their bodies and offer them to their *Natósa* (the sun), particularly when they go to war. I asked an old man, well nigh a hundred years of age, if he prayed when he was young, and how he prayed. "Oh! yes," he answered, "every morning my mother took me into the woods, and having found a dry pine-tree, broken and rotten from old age, she told me, 'My son, go and rub yourself against that tree, and pray.' And so I did, saying, 'O my good tree! have pity of me, and let me live as long as you have lived;' and I repeated always the same prayer; my mother did the same at another tree not far from mine, until our sore shoulders compelled us to put an end to our prayers."

Generally the prayers of our Indians consisted in asking to live a long time, to kill plenty of animals and enemies, and to steal the greatest number of horses possible; and this was the only instance when to steal was not a fault, but a great merit and bravery, since no man could ever hope to become a chief unless he had killed at least seven Blackfeet, and stolen twelve horses.

As it happens rather often that both people and animals are killed by lightning, so they regarded it as an evil genius; and the rainbow was for them nothing else than the same lightning looking down for prey amongst the people; they believed that the only means to avoid being killed, was to move off immediately and to go and encamp at some miles' distance.

NOTE.—The above is from a letter of Father Mengarini to Geo. Gibbs, Esq.; though written some years ago, it is published for the first time in the "Journal of the Anthropological Institute of New York," Vol. i, p. 81, 1871.

Mr. Gibbs states that the frog-wife story exists in a modified form among the Nisquallies and other tribes also, as does much of the remaining mythology of the Rocky Mountains Flatheads. It is noticeable that the Mexicans, according to Garva, quoted by

Gallatin ("Trans. Am. Ethn. Soc.," vol. i, p. 97), believed in the destruction of the world four times by various causes, on each occasion of which the sun also perished, so that the present is the fifth sun.

MICROSCOPY.

GASES AND VAPORS IN MICRO-CHEMISTRY.—Mr. E. Ray Lankester describes in the "Quarterly Journal of Microscopical Science" his gas-chamber, which is a modification of the one used by Schweigger-Seidel. A watch-glass-shaped piece of glass has its edges ground and cemented to a flat plate of glass. The top of the dome thus formed is ground away so as to make a large opening into its cavity, and closed by a thin cover glass which bears the object to be examined upon its under surface and therefore inside of the cavity of the dome. This covering glass is held in position, and the joint rendered air-tight, by means of oil. Into the top and sides of the dome are inserted glass tubes, three in number, through which re-agents, in the form of gas or vapor, are introduced into the dome by means of suction or of pressure. To prevent too rapid drying of the object, as a drop of blood, the gas may in some cases be previously passed through warm water in a Wolff's bottle. Heat may be applied by introducing one end of a stout copper wire through one of the tubes, and heating the end which remains outside, or by similarly introducing a platinum wire connected with the poles of a galvanic battery. In this manner liquids may be vaporized inside of the dome, if desired.

Among the re-agents thus used are water, hydrochloric acid gas, carbonic acid gas, acetic and osmic acids, nitrogen tetroxide, hydrogen sulphide, chlorine, iodine, bromine, ammonia, alcohol, ether, chloroform, carbon bisulphide and carbolic acid.

The advantages claimed for gaseous re-agents are, that some can be used in no other state, that they are applied without a deluging stream which might displace the particles under observation, that the action of diluents (as water or alcohol) is avoided, and that minute traces of the re-agent may be introduced, increased, stopped or counteracted with great facility. The author believes that in chemical histology all re-agents should be applied in the gaseous form, though not exclusively so, if possible.

MICROPHOTOGRAPHY.—A good popular article on this subject is published by Mr. Charles Stodder in the "Boston Journal of